

AUTHORIZATION TO DISCHARGE UNDER THE  
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Clean Water Act as amended (33 U.S.C. §§1251 et seq.; the “CWA”), and the Massachusetts Clean Waters Act, as amended (M.G.L. Chap. 21, §§26-53),

**Town of North Brookfield  
Board of Selectmen**

is authorized to discharge from a facility located at

**North Brookfield Wastewater Treatment Facility  
59 East Brookfield Road  
North Brookfield, MA**

to receiving water named **Dunn Brook**

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

This permit shall become effective 60 days after the date of signature.

This permit and the authorization to discharge expire at midnight three years from effective date.

This permit supersedes the permit issued on September 11, 1995.

This permit consists of 11 pages in Part I, including effluent limitations, monitoring requirements; Attachment A, Acute and Modified Chronic toxicity testing protocols; Sludge Guidance; and 35 pages in Part II, including General Conditions and Definitions.

Signed this 18<sup>th</sup> day of September, 2002

/Signature on File

Linda M. Murphy, Director  
Office of Ecosystem Protection  
Environmental Protection Agency  
Boston, MA

Glenn Haas, Director  
Division of Watershed Management  
Department of Environmental Protection  
Commonwealth of Massachusetts  
Boston, MA

## Part I

**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

1. During the period beginning with the effective date and lasting through expiration, the permittee is authorized to discharge treated effluent from outfall number 001. Such discharge shall be limited and monitored by the permittee as specified below:

<u>Effluent Characteristic</u>	<u>Units</u>	<u>Discharge Limitation</u>			<u>Monitoring Requirement</u>	
		<u>Average Monthly</u>	<u>Average Weekly</u>	<u>Maximum Daily</u>	<u>Measurement Frequency</u>	<u>Sample Type</u>
Flow <sup>a</sup>	MGD	0.76	----	Report	Continuous <sup>1</sup>	Recorder
BOD ( <i>May 1- October 31</i> )	mg/l	15	22	-----	1/Week <sup>2</sup>	24-Hour
	lbs/day	95	139			Composite <sup>3</sup>
( <i>November 1- April 30</i> )	mg/l	30	45			
	lbs/day	190	285			
TSS ( <i>May 1-October 31</i> )	mg/l	15	22	-----	1/Week <sup>2</sup>	24-Hour
	lbs/day	95	139			Composite <sup>3</sup>
( <i>November 1- April 30</i> )	mg/l	30	45			
	lbs/day	190	285			
pH	S.U.	(See Condition I.A.1.a on page 5)			1/Day	Grab
Fecal Coliform Bacteria <sup>4</sup>	cfu/100 ml	200	----	400	1/Week	Grab
Ammonia-Nitrogen <sup>5</sup>						
( <i>May 1- October 31</i> )	mg/l	1.0	1.5	-----	1/week	24-Hour
	lbs/day	6.3	9.5			Composite <sup>3</sup>
( <i>November 1- April 30</i> )	mg/l	5.4	Report			
	lbs/day	34.3	Report			

<u>Effluent Characteristic</u>	<u>Units</u>	<u>Discharge Limitation</u>			<u>Monitoring Requirement</u>	
		<u>Average Monthly</u>	<u>Average Weekly</u>	<u>Maximum Daily</u>	<u>Measurement Frequency</u>	<u>Sample Type</u>
TKN, Nitrite & Nitrate Nitrogen	mg/l lbs/day	Report Report	-----	-----	1/quarter	24-Hour Composite <sup>3</sup>
Total Phosphorus (May 1-October 31)	mg/l lbs/day	1.0 6.3	1.5 9.5	-----	1/week	24-Hour Composite <sup>3</sup>
(November 1- April 30)	mg/l lbs/day	Report Report	----- -----		1/month	
Copper	ug/l	5.16	-----	7.28	1/Month	24-Hour Composite <sup>3</sup>
Zinc	ug/l	66.59	-----	67.14	1/Month	24-Hour Composite <sup>3</sup>
Aluminum <sup>6</sup>	ug/l	87	-----	750	1/Month	24-Hour Composite <sup>3</sup>
LC <sub>50</sub> <sup>7,8</sup>	%	-----	-----	100%	4/year	24-Hour Composite <sup>3</sup>
Chronic NOEC <sup>7,9</sup>	%	-----	-----	100%	4/Year	24-Hour Composite <sup>3</sup>
Dissolved Oxygen (May 1- October 31)	mg/l	>5.0	>5.0	-----	1/week	Grab

## Footnotes:

1. For flow, report maximum and minimum daily rates and total flow for each operating date. The average flow shall be an annual average and reported each month using the monthly average flows for the 12 previous months.
2. Sampling required for influent and effluent.
3. A 24-hour composite sample will consist of at least twenty-four (24) grab samples taken during one operational daily cycle (e.g. 0700 Monday- 0700 Tuesday).
4. Fecal coliform monitoring conducted and limit will be in effect for the period *May 1- October 31*. This is a state certification requirement. The monthly average limit is expressed as a geometric mean.
5. The permittee must monitor ammonia with a “report only” requirement from the effective date through April 2002. The winter ammonia limits become effective beginning Winter 2002-2003.
6. Aluminum is a “report only” requirement for the first 12 months of the permit. The aluminum limits become effective one (1) year from the effective date of this permit.
7. The permittee shall conduct acute and modified chronic toxicity test four times per year. The permittee shall test the daphnid specie, Ceriodaphnia dubia and the fathead minnow, Pimephales promelas. The test samples shall be collected in *second week of February, May, August, and November*. Results are to be submitted by the *30<sup>th</sup> day of the month after the sample, i.e. March, June, September, and December*. See Permit Attachment A, Toxicity Test Procedure and Protocol.
8. The LC<sub>50</sub> is the concentration of effluent which causes mortality to 50% of the test organisms. Therefore, a 100% limits means that a sample of 100 % effluent (no dilution) shall cause no more that a 50% mortality rate.
9. The “100% or greater” is defined as a sample which is composed of 100% (or greater) effluent, the remainder being dilution water. This is a maximum daily limit derived as a percentage of the inverse of the dilution factor of 1.0.

**PART I.A.1 (continued)**

- a. The pH of the effluent shall not be less than 6.5 S.U., nor greater than 8.3 S.U. at any time, unless these values are exceeded due to natural causes or as a result of the approved treatment processes.
- b. The discharge shall not cause objectionable discoloration of the receiving waters.

- c. The effluent shall contain neither a visible oil sheen, or foam, nor floating solids at any time.
  - d. The permittee's treatment facility shall maintain a minimum of 85 percent removal of both total suspended solids and biochemical oxygen demand. The percent removal shall be based on monthly average values.
  - e. When the effluent discharged for a period of 90 consecutive days exceeds 80 percent of design flow, the permittee shall submit to the permitting authorities a projection of loadings up to the time when the design capacity of the treatment facility will be reached, and a program for maintaining satisfactory treatment levels consistent with approved water quality management plans.
3. All POTWs must provide adequate notice to the Director of the following:
- a. Any new introduction of pollutants into that POTW from an indirect discharger in a primary industry category discharging process water; and/or
  - b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
  - c. For purposes of this paragraph, adequate notice shall include information on:
    - (1) The quantity and quality of effluent introduced into the POTW; and
    - (2) Any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.
4. Prohibitions Concerning Interference and Pass Through:
- a. Pollutants introduced into POTWs by a non-domestic source shall not pass through the POTW or interfere with the operation or performance of the works.
  - b. If, within 30 days after notice of an interference or pass through violation has been sent by EPA to the POTW, and to persons or groups who have requested such notice, the POTW fails to commence appropriate enforcement action to correct the violation, EPA may take appropriate enforcement action.
5. Toxics Control
- a. The permittee shall not discharge any pollutant or combinations of pollutants in toxic amounts.
  - b. Any toxic components of the effluent shall not result in any demonstrable harm to aquatic life or violate any state or federal water quality standard which has been or may

be promulgated. Upon promulgation of any such standard, this permit may be revised or amended in accordance with such standards.

- c. The permittee shall minimize the use of chlorine while maintaining adequate bacterial control.

#### 6. Numerical Effluent Limitations for Toxicants

EPA or DEP may use the results of the toxicity tests and chemical analyses conducted pursuant to this permit, as well as national water quality criteria developed pursuant to Section 304(a)(1) of the Clean Water Act (CWA), state water quality criteria, and any other appropriate information or data, to develop numerical effluent limitations for any pollutants, including by not limited to those pollutants listed in Appendix D of 40 CFR Part 122.

### **B. UNAUTHORIZED DISCHARGES**

The permittee is authorized to discharge to surface water only in accordance with the terms and conditions of this permit and only from the outfall listed in Part I.A.1 of this permit.. Discharge of wastewater from any other surface water point source is not authorized by this permit and shall be reported in accordance with Section D.1.e.(1) of the General Requirements of this permit (Twenty-four hour reporting).

### **C. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM**

Operation and maintenance of the sewer system shall be in compliance with the General Requirements of Part II and the following terms and conditions:

#### 1. Maintenance Staff

The permittee shall provide adequate staff to carry out the operation, maintenance, repair and testing functions required to ensure compliance with the terms and conditions of this permit.

#### 2. Infiltration/Inflow

The permittee shall develop and implement a plan to control infiltration and inflow to the sewer system. The plan shall be submitted to EPA and MA DEP six (6) months from the effective date of the permit. The plan shall address, at a minimum:

- eliminate high flow related effluent limit violations and all high flow related unauthorized discharges of wastewater.
- prioritize removal of public and private inflow sources that are upstream from, and potentially contribute to, known areas of sewer system backups and/or overflows, taking into account the health and environmental impacts of such overflows or backups.

- development of a formal written infiltration and inflow removal program with defined funding sources.
- include an ongoing program of internal pipeline and manhole inspections designed to provide an understanding of the sewage system, identify significant I/I sources, identify all potential and actual unauthorized discharges of sanitary sewage, and identify/prioritize areas that will provide increased aquifer recharge as the result of reduction/elimination of infiltration to the system.
- develop and implement a private source identification and control program keying on redirection of sump pumps and disconnection/redirection of roof downspouts. Permittee should target distribution of public education material prior to, and during, projects to remove private inflow sources and rehabilitate/replace sewer service connections as an integral part of local public works projects for roadway reconstruction and utility improvement.
- include an ongoing preventive maintenance program designed to avoid high flow related effluent limit violations and unauthorized discharges due to malfunctions or failures of the sewer system infrastructure.
- development and implementation of an educational public outreach program for all aspects of I/I control, particularly private inflow.

A summary report of all actions taken to minimize I/I during the previous calendar year shall be submitted to EPA and the MA DEP by February 28<sup>th</sup> of each year. The summary report shall include at a minimum:

- a map of the sewer system, with priority areas identified.
- a graph of flows to the treatment plant during the year and an analysis of I/I trends (i.e. is I/I being reduced).
- a description of inspection and maintenance activities conducted and progress made related to priority areas.
- an accounting of I/I related expenditures.
- a report of unauthorized discharges during the previous calendar year which were caused by inadequate sewer system capacity, excessive I/I and operational/maintenance problems including a status of action items necessary to eliminate the discharges. The information reported shall include the date, location, duration, and volume of discharge as well as the cause of the overflow and the receiving water.

3. Alternate Power Source

In order to maintain compliance with the terms and conditions of this permit, the permittee shall continue to provide an alternative power source with which to sufficiently operate its treatment works (as defined at 40 CFR § 122.2).



#### 4. Phosphorus Loading Evaluation and Reduction Program

The permittee shall undertake the following steps during the duration of the permit to optimize reduction in phosphorus loading from the facility to Dunn Brook. The permittee is required to undertake the following:

- i. Within *12 months of the issuance of the permit*, the permittee shall implement a phosphorus monitoring program and complete a loading analysis sufficient to characterize loadings into the facility as well as loadings to the receiving water; the evaluation shall be such that variations in loadings can be determined with a high degree of confidence; the results of this analysis should be submitted to the permit authorities within three months of the completion of the study.
- ii. Within *24 months of the issuance of the permit* the permittee shall develop an optimization plan to provide maximum removal of phosphorus with the current facility with the possible alterations to treatment techniques (e.g. multiple dosing points for metal salt injection), shall develop a program to minimize influent phosphorus loadings and develop and implement a program to reduce phosphorus influent loads. The plan should be submitted to the regulatory agencies within three months of completions and implemented during the remaining time period of the permit.

#### D. SLUDGE CONDITIONS

1. The permittee shall comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practices and with the CWA Section 405(d) technical standards.
2. The permittee shall comply with the more stringent of either state or federal requirements.
3. The technical standards (Part 503 regulations) apply to facilities which perform one or more of the following use or disposal practices.
  - a. Land application - the use of sewage sludge to condition or fertilize the soil
  - b. Surface disposal - the placement of sewage sludge in a sludge-only landfill
  - c. Placement of sludge in a municipal solids waste landfill.
4. These conditions do not apply to facilities which transport sewage sludge to another facility for use or disposal or which do not use or dispose of sewage sludge (e.g. lagoons - reed beds); or material described in 40 CFR 503.6 (Exclusions).
5. The permittee shall use and comply with the attached guidance document to determine appropriate conditions. Appropriate conditions contain the following elements:
  - General requirements
  - Pollutant limitations
  - Operational standards (pathogen reduction requirements and vector attraction reduction requirements)
  - Management practices

- Record keeping
- Monitoring
- Reporting

Depending upon the quality of material produced by a facility, all conditions may not apply to the facility.

6. The permittee shall monitor the pollutant concentrations, pathogen reduction and vector attractions reduction at the following frequency. This frequency is based upon the volume of sewage sludge generated at the facility in dry metric tons per year.

<u>Sludge Volume (dry metric tons/year)</u>	<u>Monitoring Frequency</u>
less than 290	1/year
290 to less than 1500	1/quarter
1500 to less than 15,000	6/year
15,000+	1/month

7. The permittee shall sample the sewage sludge using the procedures detailed in 40 CFR 503.8.
8. The permittee shall submit an annual report containing the information specified in the guidance. Reports are due annually by *February 19*. Reports shall be submitted to the address contained in the reporting section of the permit.

#### **E. MONITORING AND REPORTING**

1. Reporting

Monitoring results obtained during the previous month shall be summarized for each month and reported on separate Discharge Monitoring Report Forms(s) postmarked no later than the *15<sup>th</sup> day of the month* following the effective date of the permit.

Signed and dated originals of these, and all other reports required herein, shall be submitted to the Director and the State at the following addresses:

Environmental Protection Agency  
Water Technical Unit (SEW)  
P.O. Box 8127  
Boston, Massachusetts 02114

The State agency is:

Massachusetts Department of Environmental Protection  
Bureau of Resource Protection  
Central Regional Office  
627 Main Street  
Worcester, MA 01608

Signed and dated Discharge Monitoring Report forms and toxicity test reports required by this permit shall also be submitted to the State at:

Massachusetts Department of Environmental Protection  
Division of Watershed Management  
Surface Water Discharge Permit Program  
627 Main Street, 2<sup>nd</sup> Floor  
Worcester, MA 01608

**E STATE PERMIT CONDITIONS**

1. This discharge permit is issued jointly by the U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MA DEP) under federal and state law, respectively. As such, all the terms and conditions of this permit are hereby incorporated into and constitute a discharge permit issued by the MA DEP pursuant to M.G.L. Chap. 21, §43.
2. Each agency shall have the independent right to enforce the terms and conditions of this permit. Any modification, suspension, or revocation of this permit shall be effective only with respect to the agency taking such action, and shall not affect the validity or status of this permit as issued by the other agency, unless and until each agency has concurred in writing with such modification, suspension, or revocation. In the event any portion of this permit is declared invalid, illegal, or otherwise issued in violation of state law such permit shall remain in full force and effect under federal law as an NPDES permit issued by the U.S. Environmental Protection Agency. In the event this permit is declared invalid, illegal or otherwise issued in violation of federal law, this permit shall remain in full force and effect under state law as a permit issued by the Commonwealth of Massachusetts.